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PATENT ABSTRACTS OF JAPAN

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H01L 21/30

(21)Application number : 61-131912

(71)Applicant : TOSOH CORP

(22)Date of filing : 09.06.1986

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ARAI NOBUO
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(54) PROTECTIVE DUSTPROOF BODY FOR PHOTOMASK RETICLE

(57)Abstract:

PURPOSE: To prevent the generation of flaws by the external force of a mask and the decrease of a yield by sticking of dust thereto and to improve the productivity of semiconductor integrated circuits by using synthetic quartz glass having a specific transmittivity as a thin transparent film.

CONSTITUTION: The synthetic quartz glass which has 5mmW10 μ m thickness and has at least $\geq 90\%$ transmittivity in a 200W500nm wavelength region is used as the thin transparent film of a thin transparent film-like cover body to be installed apart at a specified distance from a substrate surface. Such synthetic quartz glass is obtd. by the hydrolysis of, for example, gaseous SiCl₄ in an oxyhydrogen flame, the reaction of the gaseous SiCl₄ and gaseous O₂ in a plasma flame or the CVD of the gaseous SiCl₄ or SiH₄ and H₂O, etc.; the synthetic quartz glass formed by the hydrolysis of the gaseous SiCl₄ in the oxyhydrogen flame, by which the uniform glass plate of a large area necessary as the protective dustproof body of the mask is economically obtd. is most preferable. A method for fixing the synthetic quartz glass plate to a mounting frame is exemplified by fixing by an adhesive agent, fixing by a gasket having a suitable shape, etc.

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Reference 2: Japanese Patent Application Laid Open No. S63-6553

Title of the Invention: Method for Preventing Dust from Adhering to Reticle

Filing Date: June 27, 1986

Applicant: Canon Inc.

Extract:

See a member consisting of reticle 3, spacer 4, parallel plane plate 5 and pattern 8 in the Fig. The Examiner recognizes that it corresponds to the photomask in the present application.

PATENT ABSTRACTS OF JAPAN

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(21)Application number : 61-149690

(71)Applicant : CANON INC

(22)Date of filing : 27.06.1986

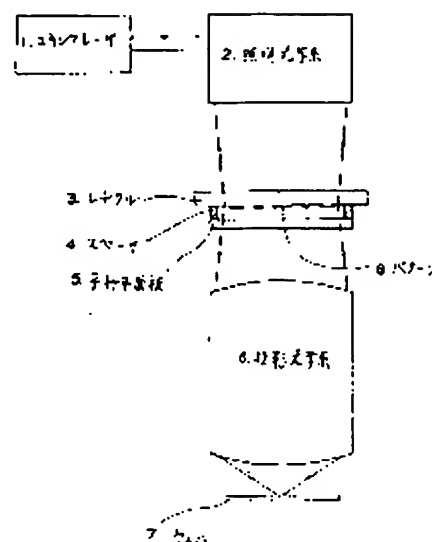
(72)Inventor : TORIGOE MAKOTO

(54) METHOD FOR PREVENTING DUST FROM ADHERING TO RETICLE

(57)Abstract:

PURPOSE: To prevent adhesion of dust, and to prevent the quality of a material from being deteriorated, by covering the surface of a reticle by sealing it up tightly by a parallel plane plate, and constituting its parallel plane plate of an inorganic material having an ultraviolet-ray transmissivity.

CONSTITUTION: Far ultraviolet rays are emitted from an excimer laser 1, and radiated to a reticle 3 through an illuminating optical system 2. On its reticle 3, a parallel plane plate 5 is provided through a spacer 4, and the reticle 3 is sealed up tightly and covered with the parallel plane plate 5. Also, on the lower face of the reticle 3, a pattern 8 is formed, and its pattern 8 is made to form an image on a wafer 7 by a projection optical system 6. In such a case, the parallel plane plate 5 is constituted of an inorganic material for allowing ultraviolet rays to transmit through, for instance, quartz, etc. Also, thickness of the spacer 4 is set to depth of focus or above of the projection optical system 6. Accordingly, since the inorganic material for allowing far ultraviolet rays transmit through is used, a drop of the light quantity of the far ultraviolet rays is prevented, adhesion of dust is prevented without deteriorating the parallel plane plate, and also, it is possible not to allow an unnecessary part to form an image on the wafer.



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